



COMPUTER RED-LINED VERSEION
For Preliminary Amendment date April 1, 2003

IN THE CLAIMS

Replace claims 1 through 20 as follows:

Replacement claim 1

- 1 1. A method for the detection of a symbol ~~form~~from a received signal wherein
2 the symbol is a selected symbol out of a predetermined set of symbols, wherein
3 each symbol of the predetermined set is a CCK symbol comprising a sequence of
4 chips wherein each of the chips is PSK-modulated according to a selected
5 modulation code wherein each of the selected modulation codes comprises a first
6 sub-modulation code which is a selection from a plurality of first sets of
7 predetermined phase modulating elements and a second sub-modulation code
8 which is a selection from one second set of predetermined phase modulating
9 elements wherein at least one of ~~said~~the predetermined phase modulating
10 elements of ~~said~~the second set is a complex value, ~~such as defined in the high~~
11 ~~speed IEEE 802.11 standard, wherein a modulation code is selected from said~~
12 ~~modulation codes which correlates according to a correlation method with the~~
13 ~~received signal,~~
14 ~~characterised in that, the method comprising:~~
15 ~~the method comprises at least the following steps:~~
16 • a. correlating the received signal with each of the possible first sub-
17 modulation codes for obtaining first correlation results and selecting a correlation
18 result;
19 • b. phase-modulating the selected first correlation result with one of ~~said~~the
20 possible second sub-modulation codes for each possible second sub-modulation
21 code for obtaining second correlation results;
22 • c. selecting the maximum second correlation result from the second
23 correlation results;
24 • d. selecting the symbol of the received signal ~~on the basis of a~~
25 ~~combination~~based on the first and second correlating results.

Replacement claim 2

- 1 2. A method according to claim 1, ~~characterized in that, in step a~~wherein. for
2 each first correlation result the value of a function of the correlation result is
3 determined and subsequently the first correlation result which provides the
4 maximum value of the function is selected wherein the function is determined by
5 the type of modulation of the second sub-modulation code.

Replacement claim 3

- 1 3. A method according to claim 2, ~~characterised in that~~wherein the function is a
2 function of the real and/or imaginary parts of the first correlation result.

Replacement claim 4

- 1 4. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein the number of first modulation results obtained in step a. equals to
3 $C_1 * C_2 * \dots * C_{i-1} * C_i * C_{i+1} * \dots * C_n$ wherein C_i is the number of elements of the i^{th} first set
4 of the first sets.

Replacement claim 5

- 1 5. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein in step b in a first substep the selected first correlation result is phase-
3 modulated with each of ~~said~~the possible second sub-modulation codes and in a
4 second substep real values are determined from results obtained in the first
5 substep for obtaining the second correlation results.

Replacement claim 6

- 1 6. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein the number of second modulation results obtained in step c. equals the
3 number of predetermined phase modulating elements of the second set.

Replacement claim 7

- 1 7. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein in step c. a predetermined phase modulating element of the second set is
3 selected which provides the selected second correlation result.

Replacement claim 8

- 1 8. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein in step d. the predetermined phase modulating elements of the first sets
3 are selected which provides the selected first correlation result.

Replacement claim 9

- 1 9. A method according to ~~claims 7 and 8, characterized in that step d,~~claim 7,
2 wherein the selected predetermined phase modulating elements of the first sets
3 are combined to obtain the symbol in the received signal.

Replacement claim 10

- 1 10. A method according to ~~any preceding claim, characterized in that,~~claim 1,
2 wherein in step a. a first correlator bank comprising a number of correlators is
3 used, wherein this number of correlators equals the number of first correlation
4 results.

Replacement claim 11

- 1 11. A method according to ~~any preceding claim, characterized in that,~~ claim 1,
2 wherein in step b. a second correlator bank comprising a number of correlators is
3 used, wherein this number of correlators equals the number of second correlation
4 results.

Replacement claim 12

- 1 12. An apparatus for the detection of a symbol from a received signal wherein
2 the symbol is a selected symbol out of a predetermined ~~set~~set of symbols, wherein
3 each symbol of the predetermined set is a ~~CGGk~~ symbol comprising a sequence
4 of chips wherein each of the chips is PSK-modulated according to a selected
5 modulation code wherein each of the selected modulation codes comprises a first

6 sub-modulation code which is a selection from a plurality of first sets of
 7 predetermined phase modulating elements and a second sub-modulation code
 8 which is a selection from one second set of predetermined phase modulating
 9 elements wherein at least one of said predetermined phase modulating elements
 10 of said second set is a complex value, ~~such as defined in the high speed IEEE~~
 11 ~~802.11 standard~~, the apparatus comprising correlating means for correlating the
 12 received signal with said modulation codes according to a correlation method and
 13 means for selecting a modulation code from said modulation codes on the basis of
 14 the correlation, wherein the apparatus further comprises:
 15 ~~characterized in that,~~
 16 ~~the apparatus comprises:~~

- 17 • a first correlator bank for correlating the received signal with each of the
- 18 possible first sub-modulation codes for obtaining first correlation results;
- 19 • ~~first selection means~~ a first selector for selecting a first correlation result
- 20 from the first correlation results;
- 21 • a second correlator bank for phase-modulating the first correlation result
- 22 with one of said possible second sub-modulation codes for each possible second
- 23 sub-modulation code for obtaining second correlation results;
- 24 • ~~second selection means~~ a second selector for selecting the maximum
- 25 second correlation result from the second correlation results;
- 26 • a control-unit ~~comprising means for controlling~~ that controls the first
- 27 ~~selecting means~~ selector on the basis of the first correlation results; and
- 28 • ~~third selecting means~~ a third selector for selecting the symbol of the
- 29 received signal on the basis of the first and second correlation results.

Replacement claim 13

1 13. An apparatus according to claim 12, ~~characterized in that,~~ wherein the
 2 control-unit determines for each first correlation result the value of a function of
 3 the correlation result, wherein the function is determined by the type of modulation
 4 of the second sub-modulation code, and subsequently controls the first ~~selection~~
 5 ~~means~~ selector on the basis of the maximum value of the function in such a way

6 that the corresponding first correlation result is selected by the first selection
7 ~~means~~selector and passed to the second correlator-bank.

Replacement claim 14

1 14. An apparatus according to claim 13, ~~characterized in that~~wherein the
2 function is a function of the real and/or imaginary parts of the first correlation
3 result.

Replacement claim 15

1 15. An apparatus method according to ~~any one of the claims 12-14,~~
2 ~~characterized in that,~~claim 12, wherein the number of first correlation results
3 obtained by the first correlator-bank equals $C_1 * C_2 * \dots * C_{i-1} * C_i * C_{i+1} * \dots * C_n$ wherein C_i
4 is the number of elements of the i^{th} first set of the first sets.

Replacement claim 16

1 16. An apparatus according to ~~any one of the preceding claims 12-15,~~
2 ~~characterized in that,~~claim 12, wherein the second correlator-bank comprises
3 means for phase-modulating the selected first correlation result with each of said
4 possible second sub-modulation codes for obtaining phase modulation results
5 and also comprises means for determining real values of the obtained phase-
6 modulated results for obtaining the second correlation results.

Replacement claim 17

1 17. An apparatus according to ~~any one of the preceding claims 12-16,~~
2 ~~characterized in that,~~claim 12, wherein the number of second correlation results
3 equals the number of predetermined phase modulating elements of the second
4 set.

Replacement claim 18

1 18. An apparatus according to ~~any one of the preceding claims 12-17,~~
2 ~~characterized in that,~~claim 12, wherein the third ~~selection means~~selectselector

- 3 selects a predetermined phase modulating element of the second set which
4 provides the selected second correlation result.

Replacement claim 19

- 1 19. An apparatus according to ~~any one of the preceding claims 12-18,~~
2 ~~characterized in that,~~claim 12, wherein the third ~~selection means~~ selectselector
3 selects predetermined phase modulating elements of the first sets which provides
4 the selected first correlation result.

Replacement claim 20

- 1 20. An apparatus according to claim 18, ~~or 19, characterized in that~~wherein the
2 third ~~selection means~~selector combines the selected predetermined phase
3 modulating element of the second set and the selected predetermined phase
4 modulating elements of the first sets to obtain the symbol of the received signal.